WHAT IS CLAIMED IS

1. Method for recognizing a structure to be applied onto a substrate, preferably an adhesive line or adhesive trail, with at least one camera, in particular multiple cameras, characterized in that the teach-in of a reference application structure is carried out by means of just a single scan of said reference application structure such that the images of all cameras are stored in a sequence of images.

2. Method according to claim 1, characterized in that each camera records just a strip of the image to form a part of the sequence of images.

3. Method according to claim 2, characterized In that the image recording rate is increased in line with the data reduction achieved by recording just a strip of the image.

4. Method for recognizing a structure to be applied onto a substrate, preferably an adhesive line or adhesive trail, with at least one camera, in particular multiple cameras, characterized in that the applied structure is processed as an optical representation during the scan for assessment of the structure such that each camera records just a strip of the image to form a sequence of images and the image recording rate is increased inline with the data reduction achieved by recording only a strip of the image.

5. Method according to at least one of the claims 2 to 4, characterized in that the image strips of the individual cameras are joined into a single image.

6. Method according to at least one of the claims 2 to 5, characterized in that per each camera only approx. 1/4 of the image lines are used as image strip and the image recording rate is quadrupled.

7. Method according to at least one of the preceding claims, characterized in that the parameterization of the sequence of images obtained from the reference application structure that results from a single image recording run of all cameras Is carried out

automatically by means of a one-time external marking of the reference application structure, and is used for comparison to an applied adhesive trail.

8. Method according to claim 7, characterized in that the robot travel path, the robot travel time, the direction, the width and the quality of the adhesive trail are used for parameterization.

9. Method according to at least one of the preceding claims, characterized in that an assessment function, in particular a fuzzy assessment, is used to analyze the adhesive agent track.

10. Method according to claim 9, characterized in that the width of the pair of edges comprising the right and the left edge of the adhesive trail, the mean gray scale value of the projected gray scale value profile between the pair of edges, the edge contrast, and the progression of position are included in the calculation by means of the assessment function.

11. Method according to at least one of the preceding claims, characterized in that the edges of the adhesive trail are determined on a surrounding track, in particular essentially a circular track in the form of a circular caliper, whereby the adhesive trail progresses within the surrounding track.

12. Method according to claim 11, characterized in that the center of the circular line or the center of the surrounding track essentially coincides with the site from which the adhesive emanates to form the adhesive trail.

13. Method according to claims 11 or 12, characterized in that each camera monitors at least one segment of the circle or orbit formed by the circular line.

14. Method according to claim 13, characterized in that each camera monitors at least one overlapping area jointly with at least one adjacent camera.

15. Method according to any one of the claims 11 to 14, characterized in that the angle values of the circular line from 0° to 360° form a global coordinate system, whereby a segment of the circular line is assigned to the images of the individual cameras.

16. Method according to any one of the claims 11 to 15, characterized in that a first camera covers at least a range of angles from -10° to 130°, a second camera at least a range of angles from 110° to 250°, and a third camera at least a range of angles from 230° to 10°.

17. Method according to any one of the claims 11 to 16, characterized in that a switch from one camera to the next is made automatically when the adhesive trail progresses from the segment of a circular line or the orbit of one camera via the overlapping area to the segment of a circular line of a different camera.

18. Method according to at least one of the preceding claims, characterized in that LED illumination means the color of which provides a suitable contrast to the color of the application structure are used for illumination.

19. Method according to claim 18, whereby infrared LEDs or UV LEDs are used.

20. Method according to claim 18 or 19, characterized in that light-emitting diodes are used, in particular RGB-LEDs.

21. Method according to any one of the preceding claims 18 to 20, characterized in that LEDs with the triple colors, red, green, and blue, are used.

22. Method according to any one of the claims 18 to 21, characterized in that the LEDs are flashed, whereby, in particular, pulses of current of 1.0 to 0.01 ms are applied to the diodes.

23. Method according to any one of the preceding claims 1 to 22, characterized in that a reference contours determined by at least two cameras, in order to carry out a three-dimensional positional correction for the application facility by means of the stereometry procedure.

24. Method according to claim 23, characterized in that the two cameras record the substrate, a section of the component or one or more components in the form of a full image or large image, whereby the full images or large images of the two cameras comprise an overlapping area in leading direction, and whereby the three-dimensional recognition of reference contour position resulting in the overlapping area is used for adjustment of the application facility prior to applying the structure.

25. Method according to any one of the claims 23 or 24, characterized in that a projection is made onto the area of the reference contour for three-dimensional analysis, in particular one or more laser lines are applied to the substrate in the form of a projection.

26. Method according to any one of the claims 1 to 25, characterized in that the individual cameras are calibrated in order to assign the angle assignment, whereby in particular a circular arc of the calibrating device with marker points at 0, 120°, and 240° for three cameras is used.

27. Method according to any one of the claims 1 to 26, characterized in that the distance of the facility for application of the structure from a feature of the component is measured in order to carry out a positional test of the applied structure, whereby in particular a line-shaped gray scale value scan is used for distance measurement.

26. Apparatus for recognizing a structure to be applied onto a substrate, preferably an adhesive line or adhesive trail, for carrying out a method according to the invention according to claims 1 to 27, whereby at least one illumination module and one sensor unit are provided, characterized in that the sensor unit is made up of at least one camera, in

particular of multiple cameras, whereby the cameras are provided around the facility for applying the structure, and each is arranged such that the cameras are directed at the facility for applying the structure.

29. Apparatus according to claim 28, characterized in that the axial longitudinal axis of the individual cameras essentially intersects, in the direction of view, the axial longitudinal axis of the application facility.

30. Apparatus according to claim 28 or 29, characterized in that the individual cameras, in particular three cameras, are arranged at equal distances from each other in the direction of the circumference.

31. Apparatus according to any one of the claims 28 to 30, characterized in that the individual cameras are circuited such that the images of all cameras are stored in a sequence of images.

32. Apparatus according to claim 31, characterized in that each camera records just a strip of the image to form a part of the sequence of images.

33. Apparatus according to claim 32, characterized in that the image recording rate is increased in line with the data reduction achieved by recording just a strip of the image.

34. Apparatus according to claim 32 and/or 33, characterized in that the image strips of the individual cameras are joined into a single image in order to teach-in the reference application structure and compare it to an applied adhesive trail.

35. Apparatus according to any one of the claims 28 to 34, characterized in that one or more cameras form an essentially circular caliper or surrounding caliper whose center point or center is formed essentially by the facility for application of the structure, whereby in particular the cameras are directed at a circle around the application facility

whose center point essentially coincides with the center point of the application facility.

36. Apparatus according to any one of the claims 28 to 35, characterized in that the individual cameras comprise an overlapping area of at least 10°, in particular 30° to 90°, relative to the next camera.

37. Apparatus according to any one of the preceding claims 28 to 36, characterized in that the illumination module is made up of LEDs, in particular infrared LEDs, UV LEDs or RGB LEDs.

38. Apparatus according to claim 37, characterized in that the LEDs are flashed, whereby pulses of current of 1.0 to 0.01 ms are used.

39. Apparatus according to any one of the claims 28 to 38, characterized in that a calibrating device with individual form elements is used for calibrating the individual cameras for the assignment of the angle assignment, whereby said form elements comprise, in particular, an angle distance of essentially 10°.

40. Apparatus according to claim 39, characterized in that the calibrating device comprises at least three marker sites that are arranged in a circular arc of the calibrating device of essentially 0°, 120°, and 240°, in order to calibrate three cameras.

41. Apparatus according to claim 40, characterized in that the marker sites on the circular line each extend in an angle range of essentially 10°, whereby the marker sites are formed, in particular, by at least two form elements.

42. Apparatus according to any one of the claims 28 to 41, characterized in that a projection facility is provided on the application facility, which projection facility projects one or more features, in particular strips, onto the substrate for a three-dimensional analysis.

43. Apparatus according to claim 42, characterized in that the projection facility emits one or more laser lines for three-dimensional profile analysis.